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EXAMINER

ANANTHANARAYANAN, RAMYA

ART UNIT PAPER NUMBER

2131

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/903,612

Applicant(s)

POELUEV ET AL.

Examiner

Ramya Ananthanarayanan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 4,5 and 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/14/2001.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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1. Claims 1-10 have been examined.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on July 13, 2001 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

3. The drawings are objected to under 37 CFR 1.84(u). According to 37 CFR 1.84(u), different views must be numbered in consecutive Arabic numerals, starting with 1. The view numbering should be independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheets. Sheets 5 and 6 of the drawings both contain views labeled as Fig. 5. Because there is no mention of Fig. 6 either in the Brief Description of the Drawings or elsewhere in the applicant's specification, it is unclear to the examiner whether one of the two views in question was meant to be labeled as Fig. 6, or if one of the views is a replacement or correction of the other view. Examiner will treat Fig. 5 on sheet 5 of the drawings as the Fig. 5 mentioned in the specification until further clarification is presented.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the kernel, driver, operating system and computer readable medium of claim 7 must be

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shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

6. Claims 5 and 10 are objected to because of the following informalities: There is a typographical error in line 1 of claim 5, which states "An system".

Additionally, there are several typographical errors in claim 10. Specifically, in

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line 1 of claim 10, "An method" is used when "A method" should be used, and in line 17 of claim 10, the word "to" is missing in between "from said correspondent" and "determine whether processing". Additionally, there is a comma on line 4 of page 9 at the end of one of the limitations of claim 10 that should be a semi-colon. Also, on line 3 of claim 10, the method should recite "having the steps of" rather than "having the step of" because more than one step is recited in the claim as part of the method. Appropriate correction is required. As a note to applicant, the formatting of claim 6 differs from the formatting of all other claims included in the specification and may want to be fixed to be in accordance with the other claims.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claim 7 refers to a driver included in a kernel of an operating system as a part of the claimed invention. Although applicant mentions a driver in an operating system in the specification, the specification has no

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mention of including a driver in the kernel of an operating system, nor does it have mention of a kernel.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 4, 5, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation of "said step of examining" in line 1 of the claim, for which there is insufficient antecedent basis. Claim 5 recites the limitation "said encapsulated IP packet" in lines 5-6 of the claim. Claim 5 also recites the limitation "said cryptographic transformations" in line 10 of the claim. There is insufficient antecedent basis for these limitations in the claim. Claim 8 recites the limitation "the cryptographic transformations" in line 1 of the claim, for which there is insufficient antecedent basis. Claim 9 recites the limitation of "secure communications between correspondents" in lines 1-2 of the claim. There is no prior mention of correspondents, or secure communication between correspondents in claim 5, the parent claim of claim 9. Thus, there is insufficient antecedent basis for the limitation in the claim.

***Claim Rejections - 35 USC § 102***

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11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-3, 5, and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Badamo et al. (U. S. Publication 2002/0184487).

13. With respect to claim 1, Badamo et al. disclose a method for providing cryptographic functions to data packets at the PPP layer of a network stack (page 4, column 1, line 19), the method including the steps of:

Intercepting PPP datagrams inbound to said network stack and outbound of network stack (page 4, column 1, lines 15-16), said PPP datagrams having at least one encapsulated data packet en route along the protocol stack;

Decapsulating said PPP datagrams to retrieve said at least one encapsulated data packet (page 4, column 1, line 18);

Determining whether to process said at least one data packet by examining said data packet (page 4, column 1, lines 56-61);

Modifying said data packet to provide said cryptographic functions (page 5, column 1, lines 40-42); and

Encapsulating said at least one data packet (page 4, column 1, line 51) for transmission to a next layer of said network stack (page 4, column 1, lines 52-53).

14. With respect to claim 2, Badamo et al. disclose the method of claim, wherein said data packet is an IP packet (page 5, column 1, lines 64-66 to page 5, column 2, lines 1-2; One of average skill in the art is aware that it is inherent in an IP packet to have a header, an address to which the IP packet is sent, and data for which the packet was created. This inherency is also taught in RFC 791 of the IETF, in which they specify a datagram having data and a header in section 2.2, page 9 of the document, and specify the header as having destination and source addresses in section 3, page 14-18 of the document.) having a header, an address and data.

15. With respect to claim 3, Badamo et al. teach the method of claim 1 wherein said step of modifying said data packet includes the further step of selecting an IPSec protocol (page 5, column 1, lines 33-34, 36-37, 41).

16. With respect to claim 5, Badamo et al. disclose a system for processing data packets by providing cryptographic functions to data packets at the PPP layer of a network stack (page 4, column 1, line 19), said system having:

A packet interceptor to intercept PPP datagrams inbound to said network stack and outbound of said stack, said PPP datagrams including at least one



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data packet, and to decapsulate said PPP datagrams to retrieve said encapsulated IP packet (page 4, column 1, lines 43-54);

A security policy manager for storing processing rules for said data packets and selecting at least one of the processing rules for said data packet (page 6, column 1, lines 20-22); and

A processing module for processing said data packet by selecting and applying said cryptographic transformations on said data packet, said processing module in communication with said security policy manager (items 73 and 74; page 6, column 1, lines 27-29);

Wherein PPP datagrams are intercepted in accordance with said processing rules (page 5, column 1, lines 33-34; the IPSec protocol is the protocol from which the processing rules and cryptographic transformations are implemented.).

17. With respect to claim 8, Badamo et al. teach the system of claim 5, wherein the cryptographic transformations are implemented using an IPSec protocol by said processing module (page 5, column 1, lines 33-34, 36-37, 41).

18. With respect to claim 9, Badamo et al. teach the system of claim 5, wherein secure communications between correspondents is provided via a virtual private network (page 1, column 2, lines 8-9).

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19. With respect to claim 10, Badamo et al. teach a method for providing a cryptographic system for communication between correspondents in a communication network (Fig. 1) to data packets at the PPP layer of a network stack, said method having the step of:

Providing a security module in a computer readable medium (page 4, column 2, line 3-4 state that the processors that perform the functions of the security module are fast path processor subsystems, and page 5, column 2, lines 3-4 state that fast path coprocessors are microprocessors, which are known in the art to be computer readable mediums.) at each of said correspondents, said security module having:

A packet interceptor to intercept PPP datagrams inbound to said network stack and outbound of said stack, said PPP datagrams including at least one data packet, and to decapsulate said PPP datagrams to retrieve said encapsulated IP packet (page 4, column 1, lines 43-54);

A security policy manager for storing processing rules for said data packets and selecting at least one of the processing rules for said data packet (page 6, column 1, lines 20-22); and

A processing module for processing said data packet by selecting and applying said cryptographic transformations on said data packet, said processing module in communication with said security policy manager (items 73 and 74; page 6, column 1, lines 27-29);

Examining said data packets outbound from said correspondent to determine whether processing by said processing module is required (page 6,

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column 1, lines 55-58; The ingress and egress processors are used to process incoming and outgoing packets.); and

Examining inbound data packets to said correspondent to determine whether processing by said processing module is required by checking whether said data packets include cryptographic functions (page 6, column 1, lines 55-58).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Badamo et al. (U.S. Publication No. 2002/0184487) in view of Ylonen et al. (U.S. Patent 6,438,612).

22. With respect to claim 4, Badamo teaches the limitations of claim 1, from which 4 is a dependent claim. Badamo does not teach the further extrapolation of claim 1, wherein the step of modifying the data packet includes further steps of checking the header information and acting upon said information. Ylonen et al. discloses further steps of modifying the data packet:

Checking header information of outbound packets to the network stack to determine if processing applies (column 8, lines 11-15; Ylonen et al. state that the selectors are used to determine if processing applies. According to column 4, lines 61-62, the selectors are specified by the security association. According to column 8, lines 15-18, the values that specify which security association is relevant is obtained in the header of the packet. Because the selectors are obtained from the security association, and the security association is obtained from the header of the packet, it can be said that the selectors can be obtained from the header of the packet); and

Checking header information of inbound packets to the network stack to determine if the data packets include cryptographic functions (column 8, lines 4-6; The VNI is selected as a 'selector' in the security association during the negotiation of applying encryption and authentication. The selectors are obtained from the security association, which can be obtained from values designated in the packet header, as mentioned above. By checking if the security association specifies a VNI, the transmitting device is checking the outbound packet's cryptographic functions).

Both Badamo et al. and Ylonen et al. are analogous art because both are in the field of secure communications networks. It would have been obvious to one of average skill in the art at the time of the invention to combine the step of Ylonen et al. with the method of Badamo et al. By doing so, the invention would have error-checking steps, and the likelihood of security problems encountered during or as a result of the invention would be decreased.

23. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badamo et al. (U.S. Publication No. 2002/0184487) in view of Lantto et al. (U.S. Publication No. 2004/0054794).

24. With respect to claims 6 and 7, Badamo et al. teach the limitations of claim 5, which is the claim upon which claim 6 is dependent. Badamo et al. also teach a packet interceptor located at the PPP layer of the network stack (page 4, column 1, lines 9-11). However, Badamo et al. does not explicitly teach a packet interceptor at the PPP layer as a software module as recited in claim 6, nor does he teach a packet interceptor as a driver in the kernel of an operating system as recited in claim 7. In the Description of Related Art, Lantto et al. discuss a well-known prior art network packet interceptor implemented as a software module, more specifically implemented as a driver included in a kernel of an operating system (page 2, column 2, lines 45-49). Both Badamo et al. and Lantto et al. are analogous art because both are in the field of secure communications networks. It would have been obvious to one of average skill in the art at the time of the invention to utilize the kernel-mode driver implementation of a packet interceptor of Lantto et al. with the packet interceptor of Badamo et al. in which the packet interceptor was located at the PPP layer of the network stack because the driver implementation is well-known art that is commercially accepted and used in the field (Lantto et al: page 2, column 2, lines 43-49).

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramya Ananthanarayanan whose telephone number is (571) 272-5860. The examiner can normally be reached on Monday through Friday, 8:30 -5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (703) 305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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